

REMARKS

Reconsideration and further examination of the subject patent application in light of the present Amendment and Remarks is respectfully requested. As a preliminary matter, applicant filed a Petition to Change Order of Names in Patent Application on May 10, 2004 and paid the required petition fee of \$130. The office action to which this document is responsive still listed Klaus Topp as the first named inventor. Stefan Wurdack should be the first listed inventor as per the filed Petition. Please make this change of record.

Remarks Regarding The Drawings

Applicant notes the Examiner's remarks regarding the drawings and has labeled Figure 1 as prior art and submits herewith four replacement sheets for the formal drawings, so labeled. No new matter has been added.

Remarks Regarding The Specification

The specification has been amended to add certain reference numerals and a definition of structure so as to be consistent with the drawings, as amended. No new matter has been added.

Introductory Remarks Regarding The Claims

Claims 1-12 are currently pending in the application and stand rejected. Claims 2 and 8 have been cancelled. The claims have also been objected to, and in response thereto, applicant has amended the claims to overcome the Examiner's objections.

Rejection Under 35 U.S.C. §102(b)

Claims 1, 5, 6, 7, 11, and 12 stand rejected under 35 U.S.C. §102(b) as being anticipated by Danielson, as set forth in paragraphs 14-19 of the Office Action. In view of the claims as presently amended, applicant respectfully traverses this rejection.

Danielson relates to a multi-parameter eddy current measuring system using a single eddy current coil to measure multiple parameters of a conductive target simultaneously using a single fixed frequency. The system in Danielson includes a sensor coil, connecting cable, and signal conditioning electronics, and is configured to measure the thickness of a target and the distance of the target from the coil. Alternatively, the Danielson system can simultaneously measure the distance of the target to the coil, i.e., lift-off, and one of the electrical properties of the target, such as the resistivity.

More specifically, the Daniel system includes an oscillator that drives an impedance network, an eddy current sensor and a parallel resonating capacitor. The oscillator is driven at a predetermined frequency and amplitude to excite the impedance network. A detection signal is demodulated by a magnitude detection circuit and a phase detection circuit to produce independent magnitude and phase output signals. The signals are further processed to determine any pair of two characteristics of the target/sensor relationship. For example, one output signal may be related to distance and the other signal may be related to the material characteristics. Col. 7, lines 17-63.

The Danielson system is used in steel roller run out applications to measure the thickness of aluminum cans during formation. Thus, this known system is used in a different technical field relative to the present invention, which in contrast is used for determining the sheet resistance of wafers and other two-dimensional objects. As stated in Danielson “those skilled in the art will note that conductivity is simply $1/\rho$, where “ ρ ” or “rho” is resistivity.” This statement is not true for determining the sheet resistance of wafers, and shows that the field of use of applicant’s invention is very different than the field of use in Danielson. The problems addressed are different, as are the solutions.

Further, the present invention, as claimed, is structurally different from the Danielson device. Whereas the Danielson device uses one single eddy current coil to measure multiple parameters, the claimed invention uses distance-measuring means for measuring the conductivity of the sample which operates in a contactless manner by means of ultrasound, capacitive or optical techniques. Danielson does not such structure.

Because at least one significant element of applicant's claimed invention is missing from the device in Danielson, Danielson cannot anticipate applicant's claimed invention. Accordingly, applicant asserts that independent claims 1 and 7 are allowable over Danielson and that claims depending from claims 1 and 7, respectively are allowable as depending from allowable base claims.

Applicant respectfully notes that anticipation focuses on whether a claim reads on the product or process that a prior art reference discloses, not on what the reference broadly "teaches." Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983). As the Examiner is aware, each and every element of a claim must be shown in the "four corners" of the reference. "To anticipate a claim, a reference must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter." PPG Industries v. Guardian Industries, 75 F.3d 1558, 37 U.S.P.Q.2d 1618 (Fed. Cir. 1996).

Rejection Under 35 U.S.C. §103

Claims 2-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Danielson in view of various secondary references to Lehman and Slates, as set forth in paragraphs 20-24 of the Office Action. In view of the claims as presently amended, applicant respectfully traverses this rejection.

As the Examiner is aware, it is impermissible to combine the teaching of prior art to produce

the claimed invention absent some teaching or suggestion supporting the combination. In re Fritch, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992). The Examiner cannot pick and choose features from the prior art to recreate the claimed invention in hindsight without some teaching or suggestion in the references to support use of the particular claimed combination. Smithkline Diagnostics Inc., v. Helena Laboratories Corp., 8 U.S.P.Q.2d 1468, 1475 (Fed. Cir. 1988).

Applicant submits that the claimed invention is not obvious over Danielson in combination with any of the cited references or references that disclose distance measuring means using ultrasound, capacitive or optical techniques. In that regard, Danielson is specifically directed to a measurement system to simultaneously measure two parameters, e.g., thickness and displacement, with a single eddy current sensor coil operating at a single fixed frequency. Col. 3, lines 3-6. Danielson discusses in the background that systems which require use of either multiple coils or frequencies or which are not capable of simultaneous measurement of different parameters, such as thickness and separation, are disadvantageous. Col. 2, lines 61-64. Thus, Danielson teaches away from the subject-matter of the present claimed invention.

Moreover, Lehman discloses in-situ metallization monitoring using eddy current measurements during a process for removing the film. In the Lehman system, both an eddy current probe and an optical probe are used to optimize film thickness measurement accuracy. The eddy current probe measurements may be utilized to determine thick film measurements, while the optical probe may be utilized to determine thin film measurements. Col. 15, lines 22-36.

In contrast to the present invention, Lehman does not disclose distance-measuring means for measuring the position of the sample in a gap for measurement. Rather, Lehman discloses the optical measurement for determining the thickness of a layer. Thus, even if one would, for some reason,

combine Danielson with Lehman, such a combination would not lead to the subject matter of the claimed invention.

The cited reference to Slates is even less relevant, and relates to a digital eddy current proximity system. Slates discloses measurement using proximity probe impedance correlative to motion and position of a metallic target object. Applicant submits that there is no teaching, suggestion or motivation to combine Danielson with either Lehman or Slates to arrive at applicant's claimed invention.

Accordingly, applicant submits that claims 1, 3-7, and 9-12 are not obvious over the cited prior art.

Closing Remarks

The art made of record by the Examiner but not relied upon as a basis of rejection, does not, whether taken alone or in combination with Danielson, Lehman, and/or Slates anticipate or render obvious any of applicant's claims as now amended in the application.

For the foregoing reasons, applicant submits that the subject application is in condition for allowance and earnestly solicits an early Notice of Allowance. Should the Examiner be of the opinion that a telephone conference would expedite prosecution of the subject application, the Examiner is respectfully requested to call the undersigned at the below-listed number.

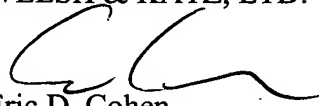
The Commissioner is hereby authorized to charge any additional fee which may be required for this application under 37 C.F.R. §§ 1.16-1.18, including but not limited to the issue fee, or credit any overpayment, to Deposit Account No. 23-0920. Should no proper amount be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit

Account No. 23-0920.

Respectfully submitted,

WELSH & KATZ, LTD.

By


Eric D. Cohen
Registration No. 38,110

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WELSH & KATZ, LTD.
120 South Riverside Plaza
22nd Floor
Chicago, Illinois 60606
(312) 655-1500

IN THE DRAWINGS:

Please amend the drawings in accordance with the replacement sheets attached hereto.